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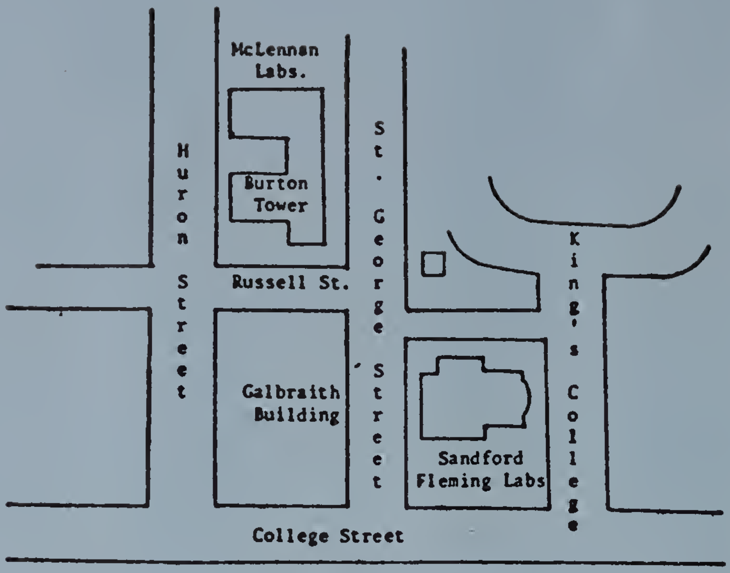
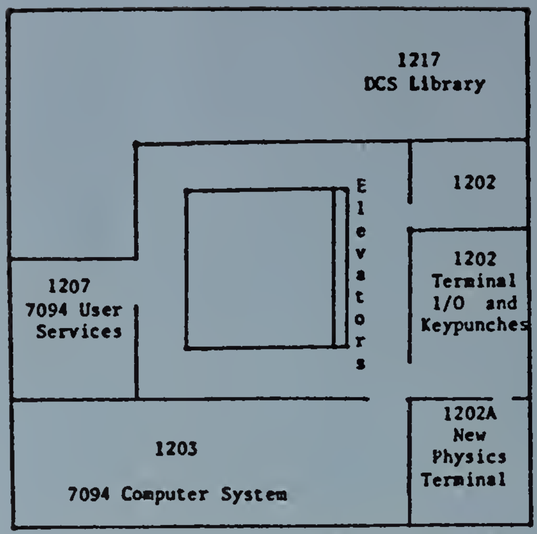
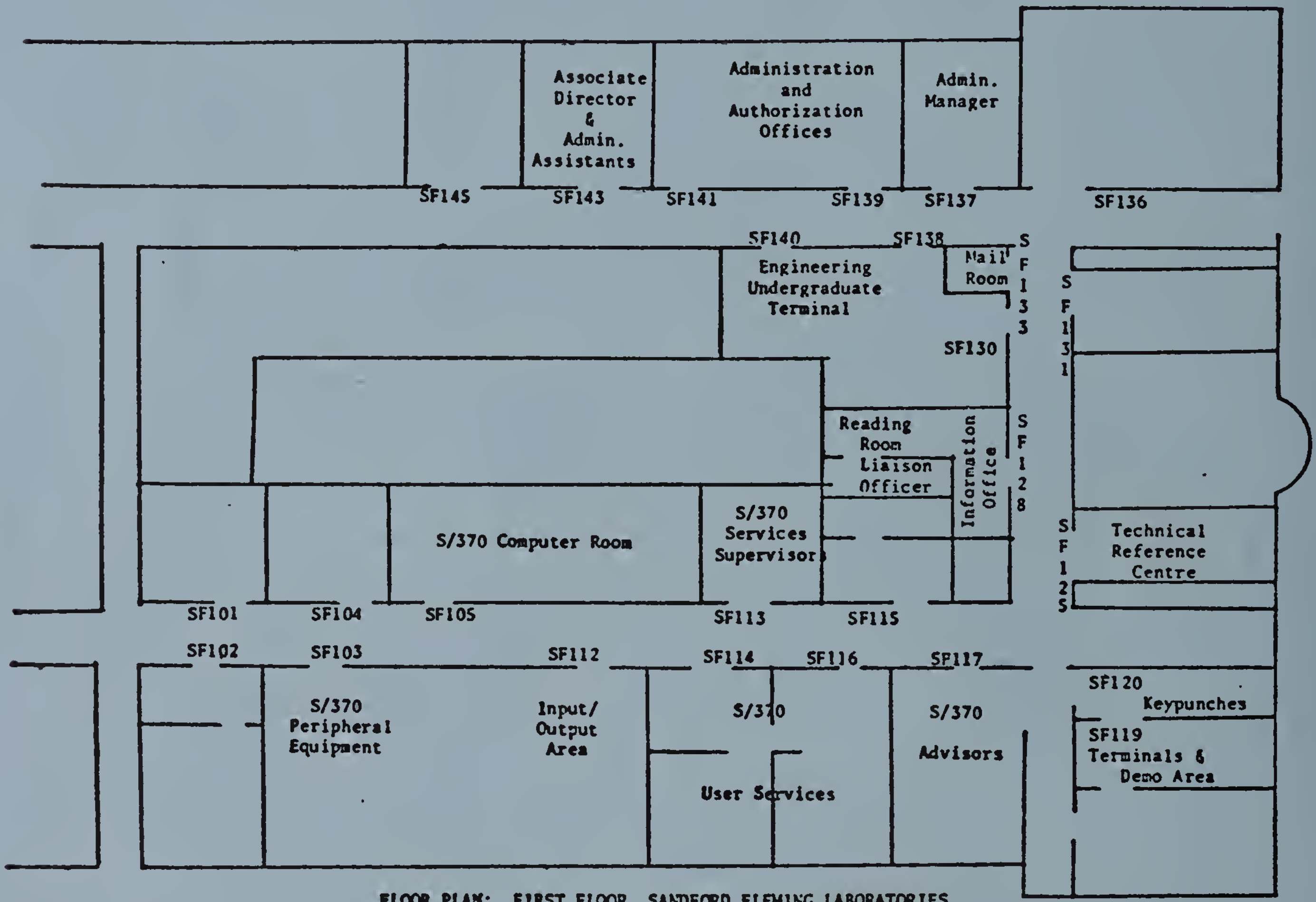


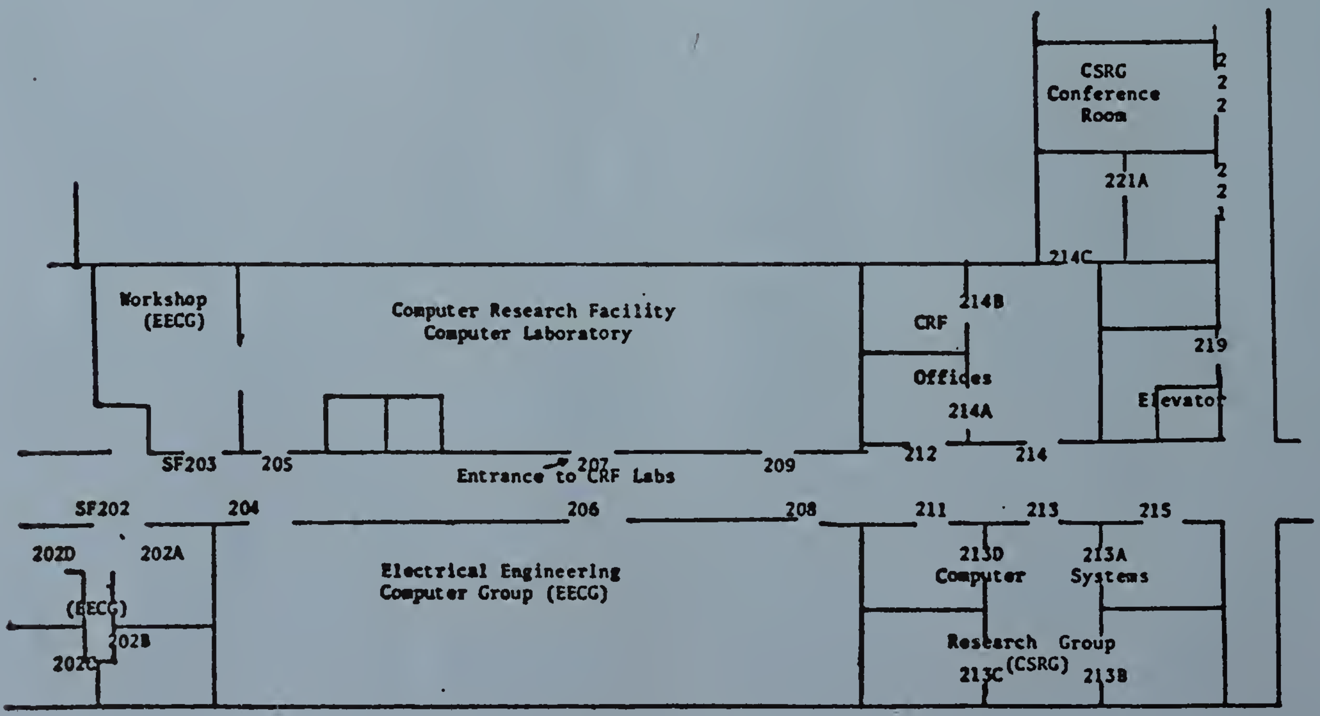


FLOOR PLAN: TWELFTH FLOOR, BURTON TOWER

UNIVERSITY OF TORONTO COMPUTER CENTRE



FLOOR PLAN: FIRST FLOOR, SANDFORD FLEMING LABORATORIES



FLOOR PLAN: SECOND FLOOR, SANDFORD FLEMING LABORATORIES

ASSOCIATE DIRECTOR

J. C. Wilson

Mr. Al Heyworth, former Director of the Division of Medical Computing within the Faculty of Medicine at the University of Toronto, has joined the University's Computer Centre as Associate Director, with primary responsibility in the area of interactive computing.

Before joining the University of Toronto, Mr. Heyworth spent seven years as head of the computing facility at the University of Alberta. During his time there, the University of Alberta installed the first 360/67 in Canada and he was involved in the early development and experimentation with the TSS, CP/CMS and MTS operating systems for the 360/67.

The University of Toronto's Division of Medical Computing has been active in online data aquisition in connection with medical experiments, using a Xerox Data Systems Sigma 5 computer. The Division is expected to continue to exist and to operate the Sigma 5, although some reorganization of its other activities may take place.

Whilst there will continue to be no organizational connection between the Division of Medical Computing and the University's Computer Centre, Mr. Heyworth will be 'wearing two hats' for a short period of time, and it is expected that the informal relationship which now exists between the two facilities will be even closer than it has been in the past.

I take this opportunity to welcome Al to the Centre and to wish him every success with us.

PERSONNEL CHANGES

P. Kellett

"Nothing is as constant as change" and the changes in Computer Centre personnel this month are as follows. We are losing the capable services of John Boddy, Don Heacock and Kent Wallace. John is leaving us to go to IBM to implement a TSO system for in-house use, and Don is going to York University Computer Centre. Good luck to all of you.

"Hello" to Chris-Michael Alevritis, Bruce Forest, John Matuszek and Patrick Rosar. Chris-Michael has joined the 7094 group and Bruce is programming for the Interactive Terminal Systems. John and Patrick have joined System/370 Services: John is programming and Patrick is working in the I/O area. Welcome to each and all and we hope your stay will be pleasurable.

CRF regretfully announces that Krishna Patnaik resigned as Section Head of Operations on October 9, 1973. Krishna joined CRF in early 1969. We wish him luck in his new position in industry.

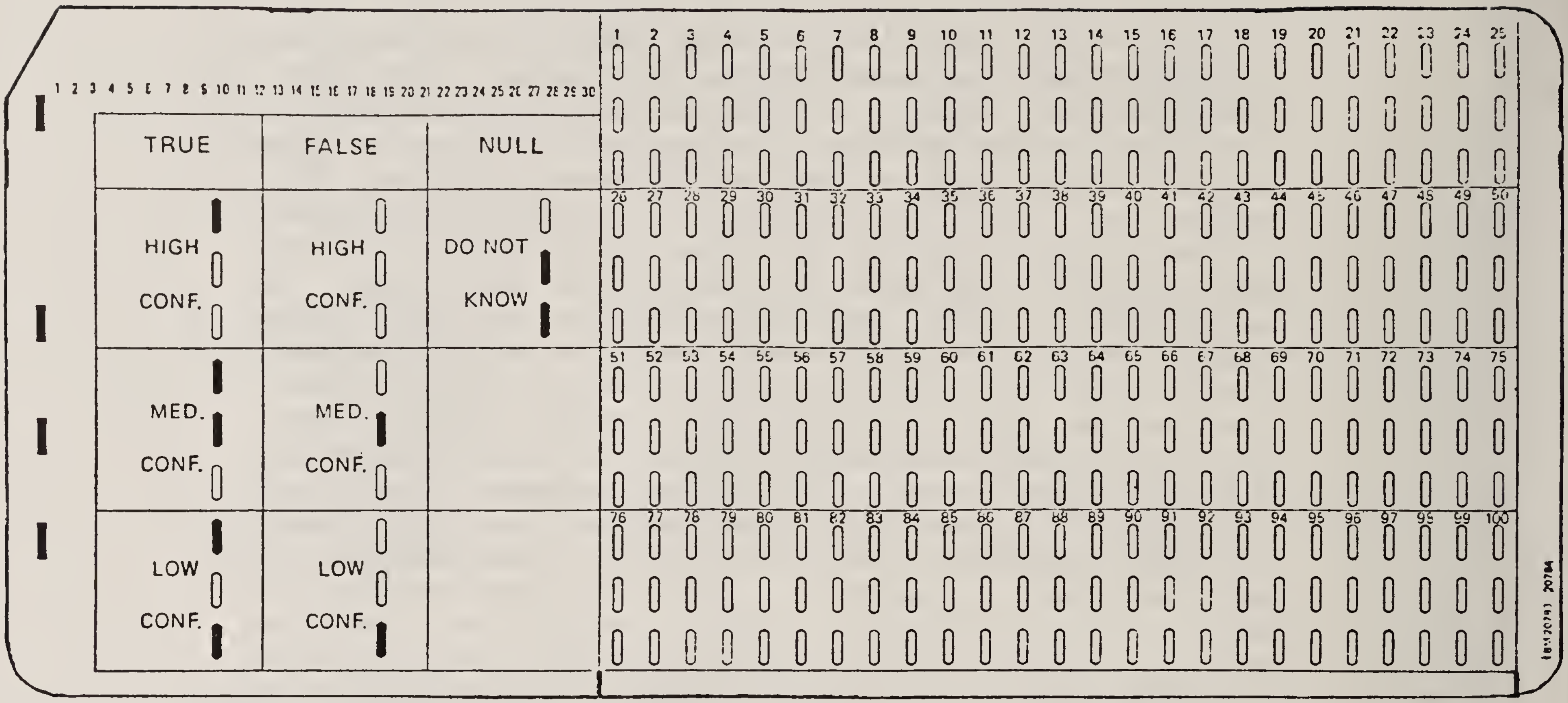
Mr. Bernard Leger has been appointed the Section Head of Operations to succeed Krishna Patnaik. Bernie has been with CRF for over four and one-half years and has gained considerable experience in the day-to-day operations of CRF.

TRUE-OR-FALSE-WITH-ADMITTED-CONFIDENCE-DATA ACQUISITION WITH OMR CARDS

F. G. Smith
Dept. of Geology

For the last nine years, we have been experimenting with multiple true-or-false-but-not-both kinds of tests in our first-year service courses of general geology for non-specialists. The responses by the students were binary logical evaluations indicated as mark-for-true and blank-for-false on 81-place mark-sense cards. These were sensed and punched by an IBM 519 machine before processing by one of our scoring or statistical programs. The results of testing almost all of the concepts and facts in specified textbooks have been uniformly good: class average final scores in general geology have risen about 35% above those using the stand-up-formal-lecture-and-final-written-examination-at-the-end-of-the-session method of teaching. However, two objections by the students had to be met by problabilistic arguments: the number marked in wrong sense is subtracted from the number marked in right sense in determining the score; and if forced to guess either true or false but not both, there would be a double penalty when the guess was wrong. The first objection usually was settled after a month or two, but the second often persisted further into the session. Considerable effort was made to design a new data acquisition method for a three-valued logical evaluation (true, false, or do-not-know) and the conclusion was that a major revision of the data acquisition cards would be necessary to do this.

After the optical mark reading (OMR) feature was added to the IBM 2501 card reader at the EUT terminal, and after unearthing the details of how the OMR marks in alternate even or odd columns were added to the 80 = 12 bits in the records of the input stream, and after the procedure 'OMR' (written by C. Rich in 370/Assembler G language) was located in the UTILSUB library, it appeared feasible to use OMR cards with up to 480 bits of binary data per card. We wanted single cards for each student in each test, so we designed an OMR card with 25 mark positions in odd columns after column 30, leaving enough room on the left for names, prior average scores and other data in EBCDIC punched code. The 12 = 25 OMR positions were split into a 3 = 100 matrix, giving the desired three-valued logical response to at least 100 statements per test. We soon realized that each triplet of marking positions allows 8 different configuations of mark or blank, allowing 8 or 2 distinct rsponses to any one test of 100 items for logical evaluations, compared with 2 on the obsoleted mark-sense cards. We were aware of some studies of admitted confidence being used with multiple choice testing, and by giving each of the eight configurations a meaning of ((*true* or *false*) and (*high* or *medium* or *low* confidence)) or (*do not know*), the major objections of the students to true/false tests could be avoided. A photocopy of the resultant card is shown below (red printing meeting the IBM light-absorption specifications was chosen for the OMR part because this colour gives darker xerographic copies than the usual light green or blue, if photocopies are needed in settling disputed scores). The left part of the card contains a printed memo of the meaning of the marks in each numbered triplet of OMR positions, but is used for punching ID and numerical information, and the resultant holes lie between and thus do not obliterate the marked OMR-like positions. (The OMR sensor adds data to the input record only after detecting the first black bar at the bottom of the card, between columns 30 and 31.) The ID information is under user program format control; we use surname, initials of given names, college, school or division of registration, sex, current average score before the test and a bonus earned by detecting ambiguities or errors in the statements of the prior test. The data on sex of the respondent is for statistical testing of significance of a small but consistently higher average final score made by the females in the course GLG 100 (Introduction to Geology).



Reprints of two papers on T/F testing and documented FORTRAN IV programs for processing the scores are available from the above author, addressed to the Department of Geology, or phone 8841.

Programming information on the use of the procedure 'OMR' for encoding a LOGICAL*1 A(3,100) matrix from the OMR part of the input records can be obtained from the following graduate student, who developed the method during the last summer months:

David F. Watson
Room 214 Mining Building
Department of Geology
Phone No. 928-8841

NEW ACQUISITIONS IN DCS LIBRARY

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The Numerical Performances of Variational Methods.
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https://archive.org/details/computersciencen105will

GOULD PRINTER/PLOTTER

R. N. M. Radcliffe

The Gould printer/plotter hardware was installed on the S/370 on October 6, 1973. As of October 18, most of the changes necessary to allow compatibility with UTCC CalComp software were completed, and user jobs were accepted for testing.

Because the printer/plotter is an online device, modifications are required to the Operating System to allow OS to recognize its existence. The modifications which had been planned were for a Gould 4800 offline device. As announced in last month's Newsletter, the Centre received a Gould 4800 online device. As a result, all testing of the software and running of user jobs has been limited to test time in the early morning hours. The test system should become a production system by November 1, and users will be able to plot during regular hours of service.

WHAT'S HAPPENING WITH TSO

J. Wettlaufer

Editor's Note: The following letter was sent to TSO account holders on October 15. It is of potential interest to other users, and for that reason it is being printed in the Newsletter.

Attention TSO Users:

After several untimely delays due to hardware installation problems, unexpected problems with existing software and in the testing of new software, full time sharing with TSO is almost ready for the users. The release date will be advertised in HOTNEWS and in TSO broadcast messages. The release date will closely follow the installation of new software components in our system during the week of October 15 - 19.

The availability of full time sharing will be accompanied by CPU and memory usage charges; a connect time charge will be implememted in the first quarter of 1974. The CPU rate will be $8.50 per CPU minute, and memory usage rate will be $1.55 per 100KB minutes of equivalent run time. The equivalent run time will be calculated from the sum of CPU and I/O wait times. The memory usage will be calculated from the core requested multiplied by the same quadratic factor as is used with batch processing.

The maximum region size available for TSO users will be 250K. However, an allocation of 150K will be sufficient to run all of the major applications and compilers that will be available when the system is released. The initial software that will be available includes: PL/1 optimizer, PL/1 checkout, (includes interactive debug), and Fortran-G1 (includes interactive debug package "TESTFORT").

Documentation for PL/1 checkout interactive debug and for Fortran-G1 interactive debug is available in the form of IBM manuals available in the Information Office, SF 128. The only information necessary for running PL/1 optimizer or Fortran-G1 may be found by entering "HELP PLI" or "HELP FORT" at a TSO terminal. Existing programs may also be executed by using the LOAD, LOADGO and CALL commands. They are documented in the IBM publications that all users should have received when their TSO account was opened. Information on all commands is available in the TSO help file.

When full time sharing becomes available the default region size that users will receive is 82K. By including a SIZE keyword when LOGON is entered, a larger region may be requested. The region size requested is the value used in the memory usage charge calculations, e.g. "LOGON TS12345 SIZE(200)" will allocate the user TSO session to a region of 200K.

The Program Advisors in SF 117 will be available for assistance for those users who encounter problems when using TSO. The advisors' phone number is 928-8599.

TSO MANUALS

GC28-6732-4 (no charge)
TSO Command Language Reference
(available when TSO account is opened)

SC33-0033-2 ($3.20)
PL/1 Checkout Compiler, TSO User's Guide
(available in Information Office)

SC28-6885-1 ($5.95)
Fortran Interactive Debug for OS(TSO)
(available in Information Office)

1971 CENSUS TAPES (SHORT FORM)

L. Prepas

Nine 1971 Census Short Form Data User Summary Tapes have been purchased and are available for use. The tapes purchased are:

(1) Enumeration Area Series (E.A.)
Demographic - Detailed Age File (2 tapes);

(2) Enumeration Area Series (E.A.)
Family Short Form File;

(3) Enumeration Area Series (E.A.)
Housing Short Form File;

(4) Enumeration Area Series (E.A.)
Household File;

(5) User E.A. Summary Tape
1971 Census of Agriculture;

(6) Level II
  (a) Short Form Demographic File 1;
  (b) Short Form Demographic File 2;
  (c) Short Form Housing File 1;
  (d) Short Form Family File 1;
  (e) Short Form Household File;

(7) Enumeration Area Series (E.A.)
Demographic Short Form File;

(8) Geography

All tapes are in packed decimal format and, therefore, are not directly accessible by FORTRAN style statistical packages (e.g. SPSS, Datatext, etc.). Detailed documentation of the format of data on the tapes is available from the Terminal Coordinators at Scarborough Terminal, Erindale Terminal, Arts and Science Terminal and from the advisor in SF 117.

An information meeting was held in the Medical Science Building, Room 3163 from 1-3 p.m. on October 18th. Various aspects of the use of the tapes were discussed. Further information on the use of the tapes will be made available both through Newsletter articles and through the Terminal Coordinators.

USER ONLINE STORAGE INCREASED

B. Gillart

Another 3330 disk pack (USER05) has been assigned to users for online dataset storage. This has increased our capacity by 7600 tracks.

We are monitoring online dataset storage growth and other increases are planned in the near future.

CORRECTION TO LAST MONTH'S NEWSLETTER

J. Lees

In the article referring to one billion bytes, the new user maximum for online storage was erroneously reported to be 880 million bytes. This should have been 780 million bytes. The remaining online disk storage (circa 395 million bytes) is used for scratch space and system data sets.

SORTS -- BIG AND LITTLE

H. Kugel

Are you planning any large sort activity? UTCC is currently preparing new sort procedures and documentation on the use of the Sort/Merge package as related particularly to large applications.

Please call Herb Kugel at 928-7286 if you are considering any new Sort/Merge activity.

FORTREF

H. Kugel

The modification of large FORTRAN programs is a common problem for many users. Sometimes a user has a 2000 or 3000 card FORTRAN program and wishes to make modifications to it. What change affects what else? Often the compilation of the program is expensive and wasteful in that the user does not really want a compile; rather, he simply wants to look at the program and see what changes he wants to make.

To alleviate this problem, UTCC has obtained FORTREF from the SHARE program library. FORTREF is a program developed at the University of California Medical Center which can be used to analyze any FORTRAN source program and to yield lists of all variables, constants, arrays, FORTRAN operations (i.e. READ, WRITE, DO, etc.), as well as all FORTRAN format statements. All the information is printed in alphabetic order together with a sequenced listing of the original source program. Also, next to each variable, constant, or FORTRAN expression are the numbers of the source statements directly affected by that argument. To use the program, all that is needed is:

```
//   EXEC FORTREF
//SYSIN DD *

         ____
         ____
         ____
         The source program to be analyzed
/*
```

The program is faster and cheaper than a compilation and yields a cross referenced logic printout that can be quite helpful in either modifying a program or learning about it.

The program will be formally documented in a USERBOOK update. If you have any questions, please call Herb Kugel at 928-7286.

USAGE OF COBOL F

H. Kugel

UTCC currently has two sets of COBOL processors available to the user. They are the ANSI VERSION 3 COBOL program product and the IBM OS COBOL F processor. The latter processor is designated as a backup by UTCC. The great majority of COBOL work utilizes the UTCC catalogued procedures COB, COBLE, and COBLEGO, which unless otherwise specified use the ANSI VERSION 3 compiler.

Recently, the centre has been tuning the ANSI compiler for optimum throughput. The tuning which has been done causes compatability problems with the backup COBOL F compiler. The source of the problem originates from the system generation options for the ANSI compiler having now been set for maximum buffer usage. The COBOL F compiler's buffer algorithms are not as efficient as the ANSI compiler's, and as a result, when the UTCC COBOL procedures are used with LEVEL=F, the F compiler fails.

There is no real difficulty, however, since the Centre also maintains the standard IBM COBOL F catalogued procedures. Therefore, if for any reason you want the COBOL F compiler, do <u>not</u> use:

```
//  EXEC  COB,LEVEL=F
//  EXEC  COBLE,LEVEL=F
//  EXEC  COBLEGO,LEVEL=F
```

Instead use the standard IBM COBOL catalogued procedures:

COBFC	-for compile only
COBFLDGO	-for compile, load and go
COBFCLG	-for compile, link edit, and execution

If you have any questions, please call Herb Kugel at 928-7286.

/*SETUP

V. Peltz

In an attempt to improve Class B and Class C job turnaround, a new control card will soon be introduced. This card, /*SETUP, will initially be used only for jobs requiring tape and/or disk mounts. Its function will be extended in the near future, however, to encompass almost all information presently required for Class C jobs.

The /*SETUP cards will replace SPEC cards with the advantage that in most cases all job resources will be known at the time the job is read into the system instead of after the job has started execution. Hence, more intelligent scheduling of available system resources will be possible which will allow more Class B and Class C jobs to run concurrently.

SELF SERVICE PRINTER

S. Verscay

In order to provide the same service at the computer terminal in the Sandford Fleming Building as already exists at other S/370 terminals, a "self service" printer has been installed in SF112. To use this service a special HASP control card is required to route the output to this printer:

```
/*ROUTE  PRINT SELFSERV
```

The card is prepunched and is available at the terminal. Self service output is restricted to 2000 lines at the present time. Jobs submitted for self service which exceed this limit will be re-routed to one of the other three printers in the terminal.

It is expected that a significant number of jobs will be handled by this printer, thus relieving the Input/Output counter staff who will be able to spend more time aiding users.

ARTS & SCIENCE TERMINAL (AST)

M. Domoney

Delivery of the REMCOM terminal and establishing an advising area at AST, have necessitated a reconfiguration of the room (SS2105). With the rewiring and furniture moving now done, this task has been completed. We apologize for any inconvenience that this change may have caused and hope that the new set up will be more convenient for users of the GPJS.

HIGH SPEED JOB STREAM NEWS

M. Tapia

Self Service I/O Introduced

The two main High Speed Job Stream terminals, ASUT and EUT, are now self service terminals. Users read in their own card decks, tear off their own output, and solve minor problems (clearing card jams from the reader, changing the paper on the line printer, etc.). After an initial three week period of user education, self service is working well at ASUT and EUT. Approximately 30% of the jobs are run at the terminals when there are no operators on duty. Recently, on Thursday, Friday, and Monday (October 11, 12 and 13), 13,567 of 19,121 jobs (70%) ran when no operator was on duty.

A manual entitled HOW TO USE -- an IBM 029 Keypunch, an IBM Card Reader, an IBM 1403 Line Printer has been prepared by S/370 Services to help the users operate the two terminals. The manual is directed toward the novice user but contains information that will be of use to experienced users as well. The manual is illustrated with line drawings and photographs. Copies of this manual are available through the Information Office in SF128. A similar guide for operating the Scarborough and Erindale terminals is available from the terminal coordinators of these terminals. A guide is being prepared for users of the new Remcom Terminals which have been installed at the New Physics, Arts and Science and Management Studies terminals. An additional guide to using the IBM 029 Keypunch is also in preparation. Copies will be available from the Information Office.

Installations

A new version of Assembler G has been installed on the High Speed Job Stream. The new version is basically the same as the old one. The only change which should not be transparent to the user is the new $JOBA card which is free format and allows continuation cards. Details on the format of this card can be obtained by running the following UTILITY (or LIST) job:

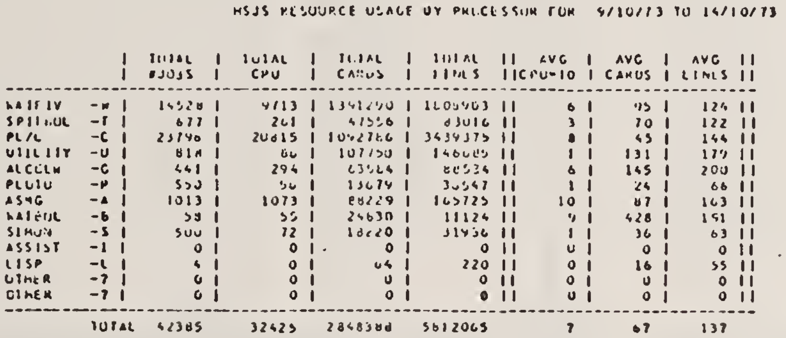
```
ccl
  $JOBRb̸b̸MEMBER=BUGS
```

The job will produce the current list of bugs for all processors and any other news for the High Speed Job Stream.

Statistics

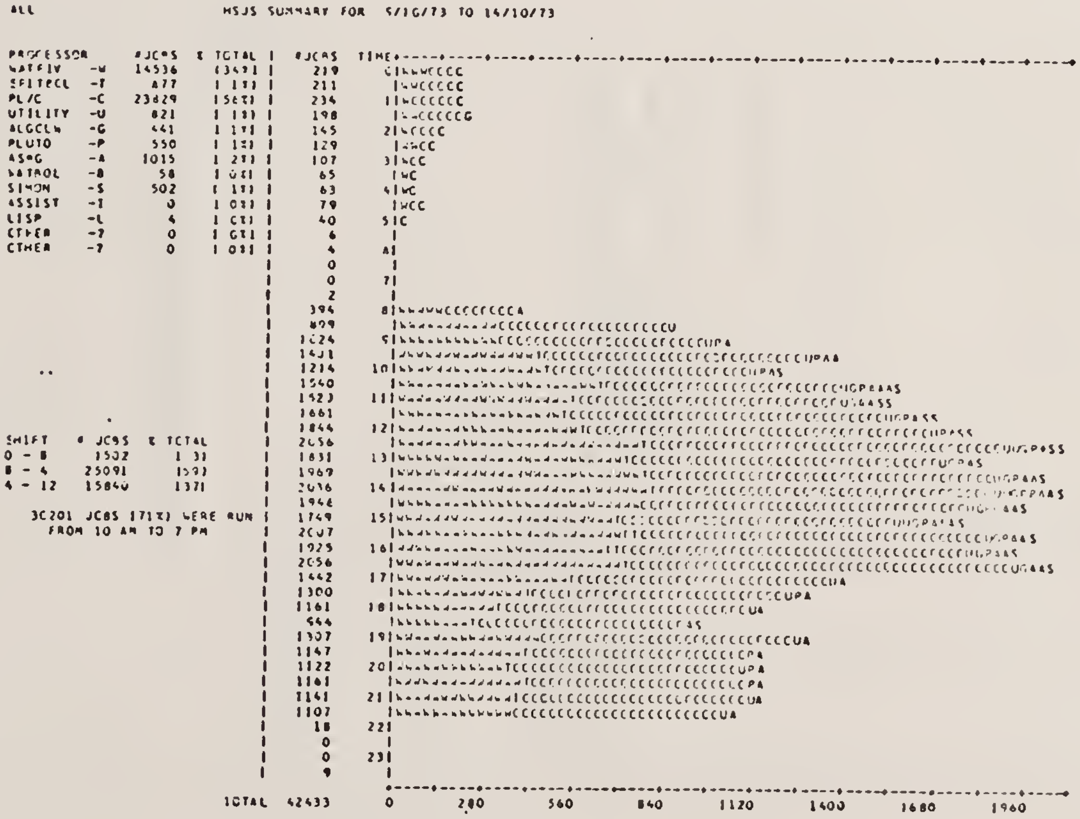
During the week of October 9 to October 14, 1973, 42,385 High Speed Job Stream jobs were run. Of these, 23,796 (or 56%) were PL/C jobs. The high usage of PL/C can be explained by the fact that PL/I is being widely used in introductory programming courses. It is also notable that over 9,000 jobs were processed on each of three days.

The table and graph reproduced below are for the week of October 9, 1973 to October 14, 1973. The CPU time reported is in hundredths of a minute.



```
                   HSJS RESOURCE USAGE BY PROCESSOR FOR  9/10/73 TO 14/10/73

              |  TOTAL  |  TOTAL  |  TOTAL  |  TOTAL  ||  AVG   |  AVG  |  AVG  ||
              |  #JOBS  |   CPU   |  CARDS  |  LINES  ||CPU-10  | CARDS | LINES ||
-----------------------------------------------------------------------------------
WATFIV   -W   |  14528  |   9713  | 1341290 | 1605903 ||     6  |    95 |   124 ||
SPITBOL  -T   |    677  |    261  |   47556 |   83016 ||     3  |    70 |   122 ||
PL/C     -C   |  23796  |  20815  | 1092766 | 3439375 ||     8  |    45 |   144 ||
UTILITY  -U   |    818  |     86  |  107750 |  146085 ||     1  |   131 |   179 ||
ALGOLW   -G   |    441  |    294  |   63564 |   88534 ||     6  |   145 |   200 ||
PLUTO    -P   |    550  |     56  |   13679 |   30547 ||     1  |    24 |    66 ||
ASMG     -A   |   1013  |   1073  |   88229 |  165725 ||    10  |    87 |   163 ||
WATBOL   -B   |     59  |     55  |   24630 |   11124 ||     9  |   428 |   191 ||
SIMON    -S   |    500  |     72  |   18220 |   31936 ||     1  |    36 |    63 ||
ASSIST   -I   |      0  |      0  |       0 |       0 ||     0  |     0 |     0 ||
LISP     -L   |      4  |      0  |      64 |     220 ||     0  |    16 |    55 ||
OTHER    -?   |      0  |      0  |       0 |       0 ||     0  |     0 |     0 ||
OTHER    -?   |      0  |      0  |       0 |       0 ||     0  |     0 |     0 ||
-----------------------------------------------------------------------------------
        TOTAL   42385      32425   2848388   5612065          7      67     137
```



```
ALL                     HSJS SUMMARY FOR  9/10/73 TO 14/10/73

PROCESSOR     #JOBS  % TOTAL |  #JOBS  TIME
WATFIV   -W   14536   ( 34%) |    219     0
SPITBOL  -T     677   (  1%) |    211
PL/C     -C   23829   ( 56%) |    234     1
UTILITY  -U     821   (  1%) |    198
ALGOLW   -G     441   (  1%) |    145     2
PLUTO    -P     550   (  1%) |    129
ASMG     -A    1015   (  2%) |    107     3
WATBOL   -B      58   (  0%) |     65
SIMON    -S     502   (  1%) |     63     4
ASSIST   -I       0   (  0%) |     79
LISP     -L       4   (  0%) |     40     5
OTHER    -?       0   (  0%) |      6
OTHER    -?       0   (  0%) |      4     6
                             |      0
                             |      0     7
                             |      2
                             |    394     8
                             |    829
                             |   1024     9
                             |   1431
                             |   1214    10
                             |   1540
                             |   1523    11
                             |   1661
                             |   1844    12
SHIFT    # JOBS  % TOTAL     |   2056
0 - 8     1502     ( 3%)     |   1831    13
8 - 4    25091     (59%)     |   1967
4 - 12   15840     (37%)     |   2036    14
                             |   1946
  30201 JOBS (71%) WERE RUN  |   1749    15
    FROM 10 AM TO 7 PM       |   2007
                             |   1925    16
                             |   2056
                             |   1442    17
                             |   1300
                             |   1161    18
                             |    944
                             |   1307    19
                             |   1147
                             |   1122    20
                             |   1161
                             |   1141    21
                             |   1107
                             |     18    22
                             |      0
                             |      0    23
                             |      9

                     TOTAL  42433     0   280   560   840   1120   1400   1680   1960
```

S/370 RELIABILITY

R. Cavanagh

Uptime for September was 86.8% of scheduled production time with an average of 3.63 unscheduled IPL's per day. This was a drastic set-back from previous months as the following table indicates.

	% Uptime	Unsch IPLs/day
Jan 73	96.8	0.87
Feb 73	98.3	1.18
Mar 73	97.8	1.16
Apr 73	97.1	1.39
May 73	98.5	1.20
Jun 73	98.5	1.70
Jul 73	99.4	0.37
Aug 73	97.6	1.13
Sep 73	86.8	3.63

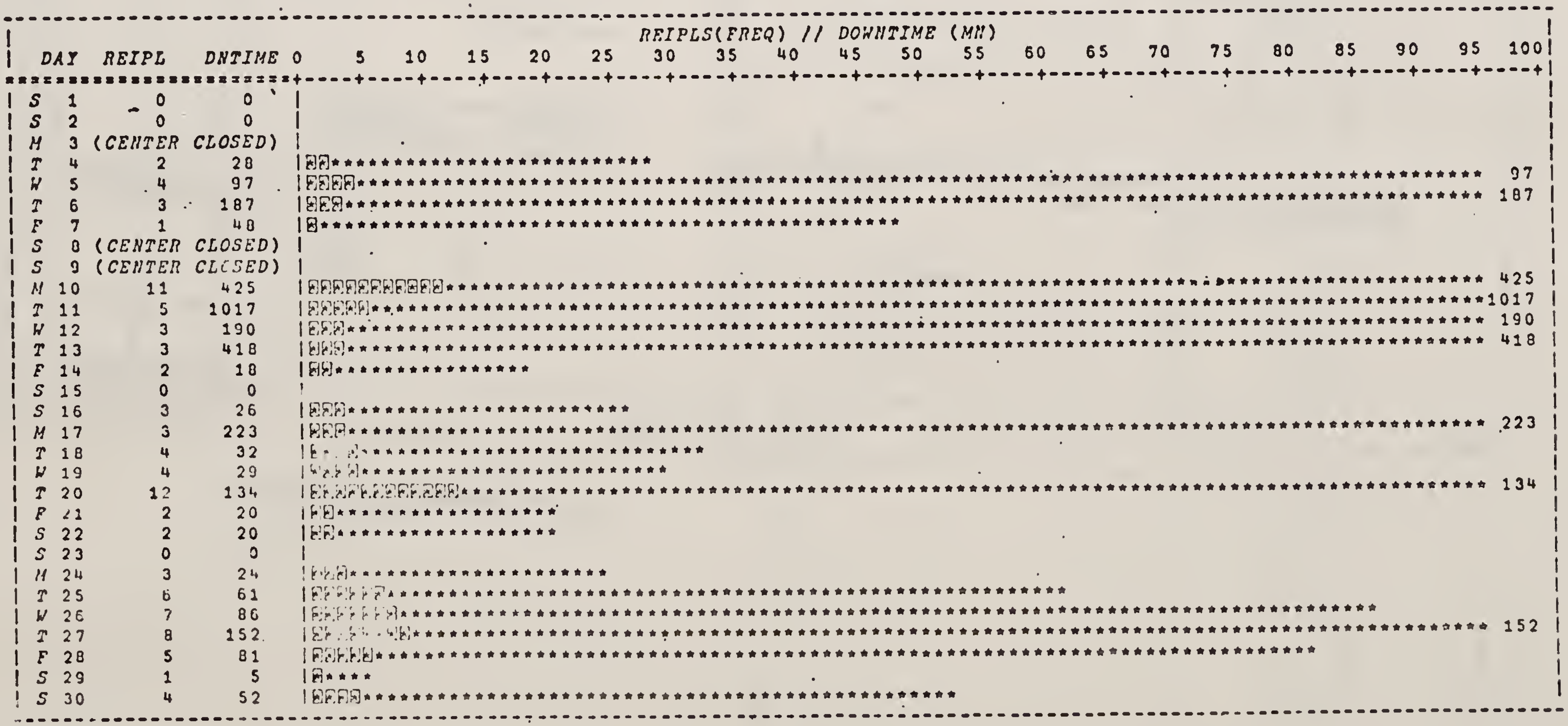
The reasons for this low system availability are discussed in the article following the graphs.

```
                     _S/370__DOWNTIMES_DURING_SEP_73

---------------------------------------------------------------------------------------------------------------------------
|                                                  TIME OF DAY (HOURS)                                                    |
|  DAY    RELOADS DNTIME  0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
=========================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+|
| S  1      0      0     |                                                                                                |
| S  2      0      0     |                                                                                                |
| M  3  (CENTER CLOSED)  |                                                                                                |
| T  4      2     28     |I             S                 I                                            S                  |
| W  5      4     97     |IIII        S                                           S             S S                       |
| T  6      3    187     |IIII        S                                 HHHHHHHH  S                                       |
| F  7      1     48     |III           S                                                                                 |
| S  8  (CENTER CLOSED)  |                                                                                                |
| S  9  (CENTER CLOSED)  |                                                                                                |
| M 10     11    425     |                                HHH             H    HHH H HHHH  HHHHHHHHHHHHHHHHHHHHHHH        |
| T 11      5   1017     |HHHHHHHHHHHHHHHHHHHHHHHH        HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH           HHH        |
| W 12      3    190     |HHHHHHHHHH        HH                    H               S                                       |
| T 13      3    418     |HHHHHHHHHHHHHHHHHHHHHHHH        HHH                           SS       S                        |
| F 14      2     18     |                   S                         S                                                  |
| S 15      0      0     |                                                                                                |
| S 16      3     26     |                                               HH  O                                            |
| M 17      3    223     |        S   HHHHHHHHHHHH        HH   H                                       H                  |
| T 18      4     32     |I              S                I                                                   HH          |
| W 19      4     29     |        H  H                                                                S S                 |
| T 20     12    134     |SSH    H H  S                   I          HHH      S            H       SH          H          |
| F 21      2     20     |             S                  I                           O                                   |
| S 22      2     20     |                                                           H   S                                |
| S 23      0      0     |                                                                                                |
| M 24      3     24     |                    S                               S  S                                        |
| T 25      6     61     |I                    S                             S     S   S  S           S                   |
| W 26      7     86     |              S                          S       HHHS    S     S       SS                       |
| T 27      8    152     |              S                 HH              S     S    S SSSSS S                            |
| F 28      5     81     |               S                I    S          H    H      S                                   |
| S 29      1      5     |                                    S                                                           |
| S 30      4     52     |                                    H                          HHHH                             |
---------------------------------------------------------------------------------------------------------------------------
LEGEND :    H FOR HARDWARE
            S FOR SOFTWARE                  STATISTICS
            O FOR OPERATIONAL
            U FOR UNEXPLAINED
            I FOR LATE IPL

                                        TOTAL SCHEDULED HOURS OF PRODUCTION :  427
                                        TOTAL DOWNTIME (MN)  : 3373 , AVG/DAY : 124.93 , AVG/PROD HOUR :   3.56
                                        TOTAL REIPL'S        :   98 , AVG/DAY :   3.63
                                        DOWNTIME RATE IS     : 13.17 PERCENT OF SCHEDULED PRODUCTION HOURS
```

DOWNTIME_REPORT_ON___S/370__FOR_SEP_73



DAY		REIPL	DNTIME
S	1	0	0
S	2	0	0
M	3	(CENTER CLOSED)	
T	4	2	28
W	5	4	97
T	6	3	187
F	7	1	48
S	8	(CENTER CLOSED)	
S	9	(CENTER CLOSED)	
M	10	11	425
T	11	5	1017
W	12	3	190
T	13	3	418
F	14	2	18
S	15	0	0
S	16	3	26
M	17	3	223
T	18	4	32
W	19	4	29
T	20	12	134
F	21	2	20
S	22	2	20
S	23	0	0
M	24	3	24
T	25	6	61
W	26	7	86
T	27	8	152
F	28	5	81
S	29	1	5
S	30	4	52

LEGEND : ONE ☐ =ONE REIPL
ONE * =ONE MINUTE OF DOWNTIME

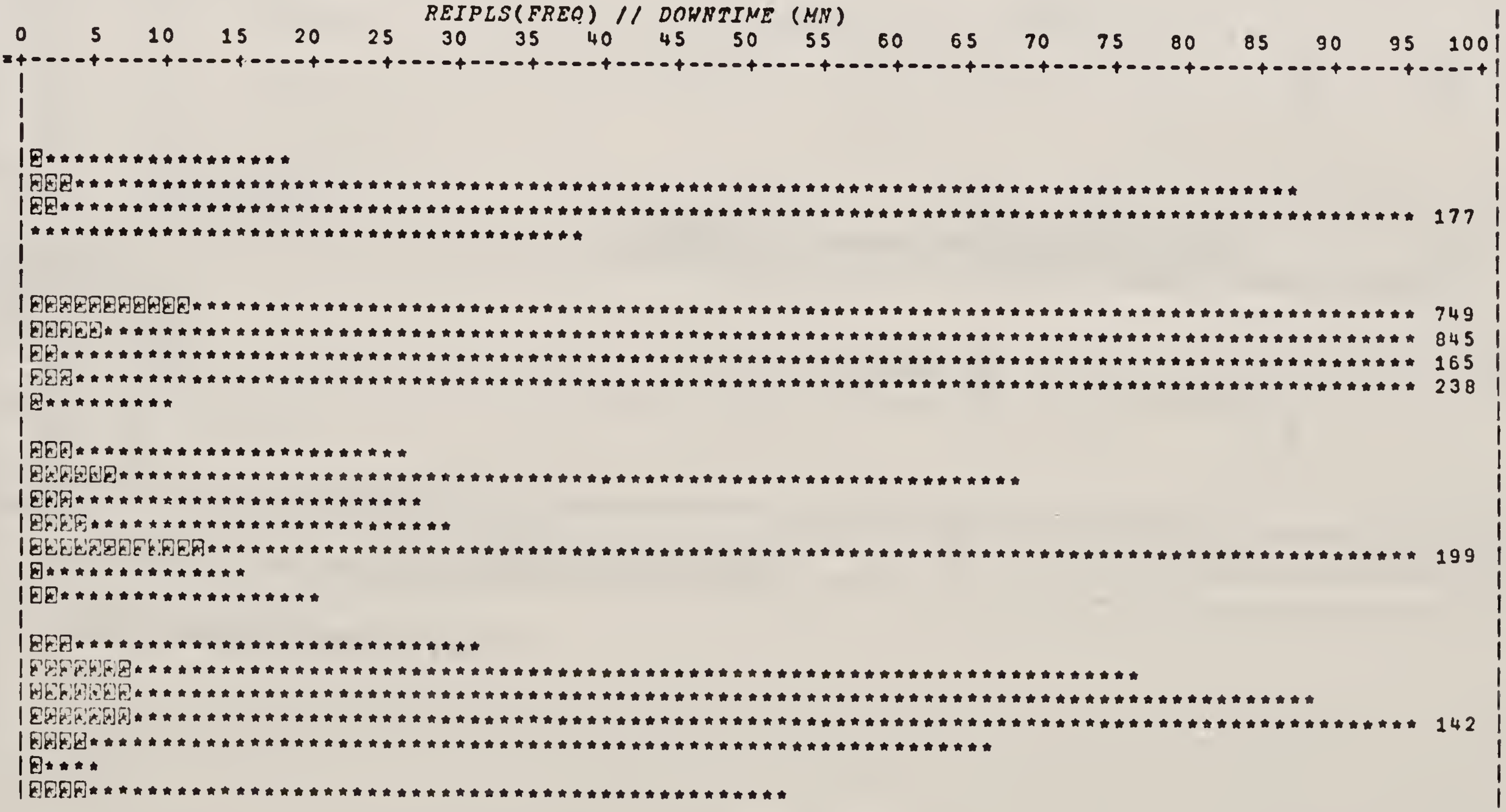
```
                     _TSO____DOWNTIMES_DURING_SEP_73

---------------------------------------------------------------------------------------------------------------------------
|                                                  TIME OF DAY (HOURS)                                                    |
|  DAY   RELOADS DNTIME  0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
=========================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+|
| S  1      0      0     |                                                                                                |
| S  2      0      0     |                                                                                                |
| M  3  (CENTER CLOSED)  |                                                                                                |
| T  4      1     18     |I                               I                                            S                  |
| W  5      3     87     |IIII                                                    S             S S                       |
| T  6      2    177     |IIII                                          HHHHHHHH  S                                       |
| F  7      0     38     |III                                                                                             |
| S  8  (CENTER CLOSED)  |                                                                                                |
| S  9  (CENTER CLOSED)  |                                                                                                |
| M 10     11    749     |                                HHH+++++++++++++H++++HHH+H+HHHH  HHHHHHHHHHHHHHHHHHHHHHH        |
| T 11      5    845     |HHHHHHHHHHHH                    HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH           HHH        |
| W 12      2    165     |HHHHHHHHHH                              H               S                                       |
| T 13      3    238     |HHHHHHHHHHHH                    HH                            SS       S                        |
| F 14      1     10     |                                             S                                                  |
| S 15      0      0     |                                                                                                |
| S 16      3     26     |                                               HH  O                                            |
| M 17      6     68     |        S                       HH   H                 + +        +          H                  |
| T 18      3     27     |I                               I                                                     HH        |
| W 19      4     29     |        H  H                                                                S S                 |
| T 20     12    199     |SSH    H H                      I          HHH      S    +++++   H       SH          H          |
| F 21      1     15     |                                I                           O                                   |
| S 22      2     20     |                                                           H   S                                |
| S 23      0      0     |                                                                                                |
| M 24      3     31     |                                                    S  S        +                               |
| T 25      7     76     |I                                                  S  +  S  +S  S    +      S                   |
| W 26      7     88     |                                         S       HHHS    S     S    + :SS                       |
| T 27      7    142     |                                HH              S     S    S SSSSS S                            |
| F 28      4     66     |                                I    S          H    H      S                                   |
| S 29      1      5     |                                    S                                                           |
| S 30      4     52     |                                    H                          HHHH                             |
---------------------------------------------------------------------------------------------------------------------------
LEGEND :   H FOR HARDWARE
           S FOR SOFTWARE                  STATISTICS
           O FOR OPERATIONAL
           U FOR UNEXPLAINED
           I FOR LATE IPL
           + FOR TSO

                                        TOTAL SCHEDULED HOURS OF PRODUCTION :  384
                                        TOTAL DOWNTIME (MN)  : 3171 , AVG/DAY : 117.44 , AVG/PROD HOUR :    3.72
                                        TOTAL REIPL'S        :   92 , AVG/DAY :   3.41
                                        DOWNTIME RATE IS     : 13.77 PERCENT OF SCHEDULED PRODUCTION HOURS
```

DOWNTIME REPORT ON __TSO____FOR SEP 73

DAY		REIPL	DNTIME
S	1	0	0
S	2	0	0
M	3	(CENTER	CLOSED)
T	4	1	18
W	5	3	87
T	6	2	177
F	7	0	38
S	8	(CENTER	CLOSED)
S	9	(CENTER	CLOSED)
M	10	11	749
T	11	5	845
W	12	2	165
T	13	3	238
F	14	1	10
S	15	0	0
S	16	3	26
M	17	6	68
T	18	3	27
W	19	4	29
T	20	12	199
F	21	1	15
S	22	2	20
S	23	0	0
M	24	3	31
T	25	7	76
W	26	7	88
T	27	7	142
F	28	4	66
S	29	1	5
S	30	4	52



LEGEND : ONE ☐ =ONE REIPL
ONE * =ONE MINUTE OF DOWNTIME

```
                      _HSJS___DOWNTIMES_DURING_SEP_73

---------------------------------------------------------------------------------------------------------------------------
|                                                  TIME OF DAY (HOURS)                                                    |
|  DAY   RELOADS DNTIME  0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24|
=========================+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+|
| S  1      0      0     |                                                                                                |
| S  2      0      0     |                                                                                                |
| M  3  (CENTER CLOSED)  |                                                                                                |
| T  4      1     11     |                                I                                            S                  |
| W  5      3     24     |                                                        S             S S                       |
| T  6      2    120     |                                              HHHHHHHH  S                                       |
| F  7      0      0     |                                                                                                |
| S  8  (CENTER CLOSED)  |                                                                                                |
| S  9  (CENTER CLOSED)  |                                                                                                |
| M 10     11    425     |                                HHH             H    HHH H HHHH  HHHHHHHHHHHHHHHHHHHHHHH        |
| T 11      5    657     |                                HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH           HHH        |
| W 12      2     15     |                                        H               S                                       |
| T 13      3     58     |                                HH                            SS       S                        |
| F 14      1     10     |                                             S                                                  |
| S 15      0      0     |                                                                                                |
| S 16      3     26     |                                               HH  O                                            |
| M 17      2     38     |                                HH   H                                       H                  |
| T 18      3     23     |                                I                                                     HH        |
| W 19      2     20     |                                                                            S S                 |
| T 20      7     95     |                                I          HHH      S            H       SH          H          |
| F 21      1     15     |                                I                           O                                   |
| S 22      2     20     |                                                           H   S                                |
| S 23      0      0     |                                                                                                |
| M 24      2     20     |                                                    S  S                                        |
| T 25      5     52     |                                                   S     S   S  S           S                   |
| W 26      6     83     |                                         S       HHHS    S     S       SS                       |
| T 27      7    142     |                                HH              S     S    S SSSSS S                            |
| F 28      4     66     |                                I    S          H    H      S                                   |
| S 29      1      5     |                                    S                                                           |
| S 30      4     52     |                                    H                          HHHH                             |
---------------------------------------------------------------------------------------------------------------------------
LEGEND :    H FOR HARDWARE
            S FOR SOFTWARE                  STATISTICS
            O FOR OPERATIONAL
            U FOR UNEXPLAINED
            I FOR LATE IPL
            □ FOR HSJS

                                        TOTAL SCHEDULED HOURS OF PRODUCTION :  330
                                        TOTAL DOWNTIME (MN)   : 1977 , AVG/DAY :   73.22 , AVG/PROD HOUR :    2.70
                                        TOTAL REIPL'S         :   77 , AVG/DAY :    2.85
                                        DOWNTIME RATE IS      :  9.98 PERCENT OF SCHEDULED PRODUCTION HOURS
```

```
DOWNTIME_REPORT_ON___HSJS___FOR_SEP_73

--------------------------------------------------------------------------------------------------------------------------------
|                                                 REIPLS(FREQ) // DOWNTIME (MN)                                                |
|  DAY   REIPL  DNTIME 0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
=======================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
| S  1       0       0 |                                                                                                       |
| S  2       0       0 |                                                                                                       |
| M  3  (CENTER CLOSED)|                                                                                                       |
| T  4       1      11 |□**********                                                                                            |
| W  5       3      24 |□□□*********************                                                                               |
| T  6       2     120 |□□********************************************************************************************* 120   |
| F  7       0       0 |                                                                                                       |
| S  8  (CENTER CLOSED)|                                                                                                       |
| S  9  (CENTER CLOSED)|                                                                                                       |
| M 10      11     425 |□□□□□□□□□□□************************************************************************************ 425   |
| T 11       5     657 |□□□□□****************************************************************************************** 657   |
| W 12       2      15 |□□*************                                                                                        |
| T 13       3      58 |□□□*******************************************************                                                |
| F 14       1      10 |□*********                                                                                             |
| S 15       0       0 |                                                                                                       |
| S 16       3      26 |□□□***********************                                                                             |
| M 17       2      38 |□□************************************                                                                 |
| T 10       3      23 |□□□********************                                                                                |
| W 19       2      20 |□□******************                                                                                   |
| T 20       7      95 |□□□□□□□****************************************************************************************        |
| F 21       1      15 |□**************                                                                                        |
| S 22       2      20 |□□******************                                                                                   |
| S 23       0       0 |                                                                                                       |
| M 24       2      20 |□□******************                                                                                   |
| T 25       5      52 |□□□□□***********************************************                                                   |
| W 26       6      83 |□□□□□□*****************************************************************************                    |
| T 27       7     142 |□□□□□□□**************************************************************************************** 142   |
| F 28       4      66 |□□□□**************************************************************                                     |
| S 29       1       5 |□****                                                                                                  |
| S 30       4      52 |□□□□************************************************                                                   |
--------------------------------------------------------------------------------------------------------------------------------

LEGEND       : ONE □  =ONE REIPL
               ONE *  =ONE MINUTE OF DOWNTIME
```

SEPTEMBER DOWNTIME

S. Yagi

The S/370 experienced an inordinate amount of downtime during September. Most users are too aware that problems have occurred, and UTCC realizes that it owes its user community an explanation of what happened.

The three primary items which were responsible for the unscheduled downtime were the connection of Itel memory to the IBM 370/165, hardware bugs in Channel four, and Software problems in OS and TSO.

Difficulties with the addition of another megabyte of Itel memory were caused by defective driver cards which prevented our running even a two megabyte system, problems with the Storage Control Unit modifications necessary for the installation of additional memory, and timing adjustment problems with the memory.

The Channel four problems were caused by a defective internal cable which created intermittent problems difficult to trace.

The major software problems were a result of a bug in OS which caused a memory overwrite problem. In addition a TSO bug that caused looping in user regions impeded the system.

The total amount of unscheduled downtime was 3373 minutes. The memory installation accounted for 2025 minutes; Channel four for 150 minutes; OS and TSO for 835 minutes. The remaining 363 minutes is comparable to downtime experienced in other months.

We regret the inconvenience to our user community and will strive to improve service in the future.

UPDATES ISSUED TO USERBOOK SECTION 3

J. Campbell

During the past month, two chapters in USERBOOK Section 3 have been extensively revised and updated and new documentation on High Speed ASSIST has been added.

A summary of recent updates follows:

Update #23 (22Aug73)

This update is a complete replacement of USERBOOK 3.6210 *High Speed PLUTO at UTCC*. The PLUTO documentation has been revised and updated to reflect the new version of PLUTO now available.

Update #24 (28Sep73)

This update is a complete replacement of USERBOOK Chapter 3.2 *Operations and Services -- Information, Policies and Procedures*. Additions have been made to the special printer setups supplied by S/370 Services (3.2144) and the maximum region size for Class A and Class B has been increased to 250K (refer to 3.2021).

Update #25 (5Oct73)

This update replaces all the basic (or default) material in USERBOOK 3.6 *High Speed Job Stream at UTCC*. Please refer to the special filing instructions included on the cover page 3.9903-25. ASSIST is described in 3.6800, LISP in 3.6908 and UTILITY which replaces the old REPRODUCE is documented in 3.6006.

Update #26 (12Oct73)

This update provides detailed documentation on the ASSIST assembler/interpreter system now available on the High Speed Job Stream at UTCC.

INTERACTIVE SYSTEMS RELIABILITY

K. Jain

The uptimes for the month of September for each of APL, ATS, and CPS were 99.66%, 99.57% and 99.60% respectively. The total number of scheduled hours of operation during the period September 1 through September 30 were 450.5. In addition to the scheduled hours of operation, APL, ATS and CPS were available during approximately 174 hours of unscheduled weekend time.

The following table summarizes the time lost out of scheduled hours of production due to system failures for each of the systems: five unscheduled IPL's were required as a result of the failures.

DATE	DOWNTIME (mins)			REASON
	APL	ATS	CPS	
Thu. Sept. 6	15	16	17	*Power Failure (HARDWARE)
Tue. Sept. 18	33	35	37	*Power Failure (HARDWARE)
Wed. Sept. 19	-	15	-	Induced by previous day power failure
Fri. Sept. 21	15	17	18	*Solid System Loop (SOFTWARE)
Tue. Sept. 25	15	17	18	*Operating Error
Thu. Sept. 27	13	15	17	*Solid System (Test I/O waiting channel end seek)
Total	91	115	106	*IPL Required

System Failures September 1 to September 30, 1973

CRF USERS' MEETING

T. A. Holland

The September CRF Users' Meeting was held at 3:00 p.m. on Friday, 28th September in Room SF222. The meeting was chaired by D.R. Smith and a variety of topics were discussed. The October meeting was held on Friday, 26th October in Room SF222.

The remaining CRF Users' Meetings for 1973 will be held on the following dates:

November meeting	Friday, 23rd November
December meeting	Friday, 21st December

All meetings will be held in Room SF222.

RELEASE 21.7

D. R. Smith

On Tuesday, October 16, 1973 CRF held a free day for testing of OS Release 21.7. During this and previous tests, no problems appeared. Release 21.7 was implemented as the new system on Monday, October 22, 1973.

CHEAPER OFF-HOUR COMPUTING FOR GRAPHICS USERS

J. R. McBride

With the implementation of Release 21.7 of OS MFT II on Monday, October 22, 1973 the interactive computing charge will be dropped for the 2250 in off-hours. This means that from 8:00 p.m. until 8:00 a.m. (the current off-hours) the interactive charge will be zero.

FACULTY OF APPLIED SCIENCE AND ENGINEERING-OPEN HOUSE

J. R. McBride

The Faculty of Applied Science and Engineering celebrated its 100th Anniversary with an Open House. The public was invited to visit the Faculty and view its achievements.

CRF participated in this Open House and was open to the public on Thursday 18th October, Friday 19th October, and Saturday 20th October.

There was a variety of demonstrations and games available for the visitors (and staff) to enjoy.

SEMINAR NEWS

J. R. McBride

CRF has now held the first two of its Small Computer Seminars and both have been highly successful. The third in this series is entitled "An Inexpensive APL Microcomputer" and will be held at 3:00 p.m. in Room G248, Galbraith Building, on Tuesday, 30th October.

ANALOG/HYBRID COMPUTATION SEMINARS

D. Guerin

The Computer Research Facility announces a series of seminars on Analog and Hybrid Computation.

The following topics will be covered during the series:

- description of the elements of a standard hybrid computer;
- methods of programming on hybrid computers;
- examples of applications.

Anyone interested in these seminars, please contact Daniel Guerin at 928-5271, Room SF212. I am also anxious to be contacted by anyone, student or professor, who may be interested in hybrid/analog computation in the future.

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	49 St.Geo	6496
USER LIAISON OFFICER		
Bill Greene	SF128A	2694
Information Office	SF128	4990 or 4991
ADMINISTRATION MANAGER		
Jerry Palter	SF137	8948
AUTHORIZATION CLERKS		
Nancy Pocock (S/370 + 7094)	SF139	8702
Yvonne Bowen (Interactive)	49 St. Geo	8703
S/370 SERVICES		
MANAGER		
Dave McNaughton	SF136	6281
SERVICES SUPERVISOR		
Stan Yagi	SF113	7331
OPERATIONS SUPERVISOR		
Derry Cox	SF113	7092
OPERATIONS SUPPORT SUPERVISOR		
Bob Cavanagh	SF114	4967
SYSTEM SOFTWARE SUPERVISOR		
Rein Mikkor	SF113	5058
PROGRAM ADVISORS	SF117	8599
INTERACTIVE TERMINAL SYSTEMS		
MANAGER		
Sam Goldfarb	49 St.Geo	3787
7094 SERVICES		
MANAGER		
Joyce Walton	BT1207	7094
COMPUTER RESEARCH FACILITY		
MANAGER		
J. R. McBride	SF214	4086

JOB STATUS QUERIES:	
SYSTEM/370	7373
7094	7094
INTERACTIVE TERMINAL SYSTEMS:	
System Status	6234
APL	7200
ATS	7100
CPS	6200
CONVERSATIONAL REMOTE JOB ENTRY (CRJE)	
2741: Tel: 7223 7381	7386
TTY:	7445
TSO	
TTY	7370
2471	7303

UTCC COMPUTER EQUIPMENT

(a) SYSTEM/370 MODEL 165

- located in SF 103/105/112
- provides General Purpose Job Stream, High Speed Job Stream and Conversational Remote Job Entry services
- 3072K bytes of memory
- 1 drum
- 10 disk drives IBM (3330)
- 8 disk drives IBM (2314)
- 6 magnetic tape drives (4 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 7 remote batch terminals
- 1 paper tape reader
- CALCOMP plotter (11" and 30")
- OS/MVT with HASP

(b) SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 16 disk drives (2314)
- 2 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals

- OS/MVT with APL, ATS, and CPS

(c) 7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

(d) IBM/360 MODEL 44

- located in SF207
- 256K core
- 10 disk drives (8 2314's and 2 2311's)
- 2 2401 tape drives
- 2 1403 printers
- 2 2501 card readers
- 2701 data adapter unit
- 2250 video display unit
- RADDTS

- Calcomp microfilm plotter
- minicomputers
- VW01 Digitizing Tablet

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